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17. The method of claim 12, wherein particles of said solid fuel are distributed within said outer portion of said metal oxide to increase permeability thereof to improve flow of said ascending hot gas through said vertical column of said charge.

REMARKS

Independent apparatus claim 1 has been amended and dependent apparatus claims 2-6 have been canceled. Independent method claim 12 has been amended and dependent method claim 16 has been canceled; method claim 17 has been amended.

Claims 1-11 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. Specifically, the Examiner takes the position that "means for feeding", "means for conveying" and "means for distributing" in claim 1 are not defined in the specification and shown in the drawings. This rejection is not believed to be proper.

In Figs. 2, 3 and 4, and the description thereof in the specification beginning at paragraph 022 on page 6 and ending on paragraph 027 on page 7, the structure referred to by the Examiner in the rejection is clearly shown and described. The "means for feeding" have been deleted from claim 1 to obviate the Examiner's rejection in this regard. The "means for conveying", as set forth in dependent claim 7, includes "at least one hopper 1, at least one sealing valve 2 and proportioning valve 4". The "means for distributing", as set forth in dependent claim 9 includes "at least one movable tube journaled for movement along a single plane" designated as 7 in the drawings, and further includes at least one movable tube journaled for movement along two planes designated as 6 in the drawings.

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The rejection of claims 2-6 has been obviated by the canceling of these claims.

Claims 1-17 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Legille et al., U.S. Patent No. 4,243,351 in view of Fukushima et al., U.S. Patent No. 4,913,406, Contrucci et al., U.S. Patent No. 6,391,086, and Wieczorek, U.S. Patent No. 3,799,368. This rejection is not believed to be proper with the claims remaining in the application in their presently amended form.

Legille et al. is deficient in neither disclosing nor suggesting means for distributing the charge to form a longitudinal central portion of solid fuel surrounded by a longitudinal portion of the metal oxide. This can not be achieved by the structure of Legille et al. Specifically, the chute suspended from a supporting fork rotatable about its axis to pivot the chute when the fork is rotated can not achieve a distribution wherein there is a column of solid fuel surrounded by a longitudinal portion of metal oxide. As described in Applicants specification with respect to Figs. 2 and 3, tube 6 and 7 are used to distribute the charge along the cross (only tube 6) and longitudinal (tubes 6 and 7) sections of the furnace and thus provide the proper positioning of the solid fuel and metal oxide which is necessary to form the column wherein the solid fuel is surrounded by a longitudinal portion of the metal oxide, as expressly recited in claim 1. The single rotating chute of Legille is not suitable for this purpose. Instead, it is necessary to have a distributor of a structure to permit movement in two planes as described in paragraph 023 of Applicants' specification.

The deficiencies of Legille, as set forth above, are not cured by the secondary references whether taken singly or in combination.

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Fukushima et al. admittedly disclose charging different ore/coke ratio mixtures in a specific pattern but do not disclose or suggest the distributing means to form a column of the charge comprising a longitudinal central portion of the solid fuel surrounded by a longitudinal portion of the metal oxide, as expressly recited in independent apparatus claim 1. Likewise, this reference does not disclose or suggest distributing metal oxide and solid fuel to produce a selected cross sectional pattern therefrom in a vertical column of charge comprising a central portion of solid fuel surrounded by an outer portion of metal oxide, as expressly recited in independent method claim 12.

Contrucci et al. admittedly disclose self reducing agglomerates but suffer from the same deficiency as Fukushima et al.

Wieczorek disclose multiple loading systems, but otherwise do not cure the deficiencies of Legille et al., as discussed above with respect to this reference.

In view of the above, favorable reconsideration of claims 1, 7-15 and 17 in their presently amended form with a view to allowance is respectfully requested.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Respectfully submitted,

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